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AMENDED CLAIMS

1. A method for manufacturing labels for placement in a mold, in particular in an injection mold, wherein a strip of film is supplied and is placed, by at least a part of a first side thereof, on a supporting carrier, wherein part of said strip, to be referred to as label, is cut out, characterized in that a retaining element is applied to, in particular slightly pressed upon, the second side, remote from the carrier, of the part of the film web supported by the carrier, wherein part of the film web enclosed between the carrier and the retaining element is cut loose, and wherein the enclosed part cut loose, to be referred to as label, is taken hold of by the retaining element and is picked up from the carrier therewith.
2. A method according to claim 1, wherein a retaining element is used which has an outer contour substantially corresponding to that of the desired label, and the label-forming part is cut loose along the outer contour.
3. A method according to claim 1 or 2, wherein the enclosed, label-forming part is taken hold of using vacuum means provided in, at least on, the retaining element.
4. A method according to claim 3, wherein the label-forming part is taken hold of using at least vacuum means extending along the outer contour of the retaining element, such that the label-forming part is pulled taut, at least kept taut, over the retaining element.
5. A method according to any one of the preceding claims, wherein the label-forming part is taken hold of using static charge of the retaining element and/or the label-forming part.
6. A method according to any one of the preceding claims, wherein the label-forming part is taken hold of using adhesion between the label-forming part and the retaining element.
7. A method according to any one of the preceding claims, wherein the label-forming part is taken hold of prior to its being cut loose.
8. A method according to claim 7, wherein the label-forming part, prior to being cut loose, is taken hold of by the carrier.
9. A method according to claim 7 or 8, wherein the label-forming part, prior to being cut loose, is taken hold of by the retaining element.

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10. A method according to any one of the preceding claims, wherein the label is transferred from the retaining element to an insertion device for placement of the label in a mold, with the label being taken over by the insertion device in approximately the same position.

11. A method for manufacturing labels for placement in a mold, in particular an injection mold, wherein a strip of film is supplied and is placed, with at least a part of a first side thereof, on a supporting carrier, thereby overlying a blanking opening, characterized in that a retaining element adjacent the strip is brought into, at least adjacent to, the blanking opening; wherein said part overlying the blanking opening, to be referred to as label, is cut out by a blanking punch against the retaining element and is thereby taken hold of and is picked up for transfer to a mold.

12. A method according to claim 11, wherein during blanking the blanking forces are substantially taken up by the carrier, such that the retaining element is substantially not loaded.

13. A method according to claim 11 or 12, wherein on the carrier a first blanking plate surrounding or forming the blanking opening is secured, while on the blanking punch a complementary second blanking plate is secured.

14. A method according to any one of the preceding claims, wherein the film web is printed, prior to the formation of the labels.

15. A method according to claim 14, wherein the printing is provided on the second side of the film web.

16. A method according to any one of the preceding claims, wherein the label, at least the label-forming part, is slightly stretched, at least on the retaining element, preferably during or immediately prior to the label-forming part being taken hold of by the retaining element.

17. A method for placing a label in a mold for in-mold labeling injection molded products, wherein the or each label to be placed is manufactured with a method according to any one of the preceding claims and subsequently is arranged in the mold against at least one wall portion and is secured against it, preferably through reduced pressure, adhesion or static charge.

18. A method according to any one of the preceding claims, wherein labels are manufactured from a film web having a thickness of less than 30

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micrometers, more particularly less than 20 micrometers, and preferably less than 15 micrometers.

19. A method according to claim 18, wherein labels are manufactured from a film web of a thickness of less than 10 micrometers.

20. A method for injection molding, wherein in a cavity in a mold a product is injection molded; wherein at least a portion of the cavity is determined by a bounding part which is arranged for movement in an ejection direction, the or each respective bounding part comprising at least one engaging part which is so arranged that, viewed in ejection direction, on both sides of the respective engaging part, a portion of the product, at least of the product space in the cavity is locked, comprising the following steps:

(a) filling the cavity;

(b) opening the mold by moving away a closing part;

(c) moving said movable bounding parts in the ejection direction, while the formed product is held between, at least by, the engaging parts and is moved at least partly out of the cavity;

(d) moving the engaging parts, such that the product is rendered clear thereof.

21. A method according to claim 20, wherein during or after step (c) the product is engaged with a removal device, prior to or at the beginning of step (d), and the product after step (d) is moved away from the mold in a controlled manner.

22. A method according to claim 21, wherein, using the removal device, the product after step (d) is first moved slightly further into the ejection direction and is subsequently carried away in a direction approximately at right angles to the ejection direction.

23. A method according to any one of claims 21 or 22, wherein using the removal device at least one insert is placed in, at least on the closing part of the mold, preferably approximately simultaneously with the engagement of the product.

24. A method according to any one of claims 20-23, wherein the or each product in the respective cavity is engaged with the engaging means in openings, at least cavities in a longitudinal wall of the product, the or each said movable bounding part further comprising means which engage on the side of the product located rearwards in the ejection direction, for obtaining an improved pressure distribution.

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25. A method according to any one of claims 20-24, wherein the product is injection molded with at least one hinge, while on opposite sides of the at least one hinge at least one and preferably at least two engaging means are provided.

26. A method according to claim 25, wherein at least one of said bounding parts extends along the at least one hinge on the side located rearwards in ejection direction, such that the product parts extending on opposite sides of the respective hinge are supported by the respective bounding part, at least during a part of the ejection of the product.

27. An apparatus for manufacturing labels for placement in a mold, in particular an injection mold, comprising:

- supply means for a film web;
- carrier means on which the film web can at least partly be supported;
- cutting means for cutting loose, at least blanking out a label-forming part of the film web;
- characterized in that retaining means are provided which comprise pickup means for holding said label-forming part of the film web, to be referred to as label, such that the label, substantially without deformation, can be picked up with the aid of at least the retaining means, loosely from the further film web, wherein the retaining means are arranged for locking at least the label-forming part against the carrier.

28. An apparatus according to claim 27, wherein the cutting means are arranged for cutting loose, at least blanking the or each label against the retaining means.

29. An apparatus according to claim 27, wherein the carrier means comprise at least one blanking opening, during use covered by the film web, while the retaining means, at least the pickup means, are arranged for movement into the blanking opening, while a blanking punch is provided for blanking in the blanking opening a label from the film web and moving said blanked-out label against the retaining means.

30. An apparatus according to any one of claims 26-29, wherein the blanking opening is formed, at least surrounded, by a first blanking plate, while the blanking punch is provided with a second, complementary blanking plate, the blanking plates being exchangeable with other first and/or second blanking plates.

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31. An apparatus according to claim 30, wherein the first and/or the second blanking plate is or are secured with the aid of detachable clamping means.

32. An apparatus according to any one of claims 26-31, wherein the carrier is arranged for taking up substantially the complete blanking forces.

33. An apparatus according to any one of claims 26-32, wherein the pickup means comprise vacuum means at least adjacent a circumferential edge of a surface of the retaining means which during use is moved against the film web, preferably distributed over substantially the entire said surface.

34. An apparatus according to any one of claims 26 or 33, wherein the retaining means comprise a surface which is held against the label during use, and the label is slightly stretched over said surface during use, while the cutting means are arranged for cutting loose the label along the outer contour of said surface.

35. An apparatus according to any one of claims 26-34, wherein the cutting means comprise a blanking punch or cutting tool.

36. An apparatus according to any one of claims 26-35, wherein the retaining means are arranged for directly placing the or each label in a mold.

37. An apparatus according to any one of claims 26-36, wherein an insertion device is provided, arranged for taking over from the retaining means a label picked up therewith, such that it can be transferred with the aid of the insertion device into an opened mold.

38. An apparatus according to any one of claims 26-38, wherein at least the insertion device is provided with a surface for taking over the label, which surface is of a smooth finish, while holding means are provided for taking hold of and holding the label in a slightly stretched condition, which holding means are so designed that they fix the label at some distance from said surface, while in a condition wherein no label is being held they are disposed substantially flush with said surface.

39. A mold, in particular an injection mold, comprising at least one cavity; wherein at least one part bounding the respective cavity engages by at least one engaging part in a product manufactured in the cavity and, with the mold opened, is at least partly movable with the product in the direction of the open side of the respective cavity, in an ejection direction,

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while during said movement the respective product is retainable on, at least with, the respective bounding part, and can be transferred to a removal device, at least can be released outside the cavity.

40. A mold according to claim 39, wherein the or each engaging part is provided for engagement of the product in a direction which includes an angle with the ejection direction, in particular an angle of approximately 90° at the beginning of the ejection movement.

41 A mold according to claim 39 or 40, wherein the or each engaging part is arranged for engagement of or behind an undercut in the product.

42. A mold according to any one of claims 39-41, wherein the or each respective bounding part is mounted in guide means which upon movement in the ejection direction take care of the release of the product from the engaging parts near the end of the movement.

43. An injection molded product provided with a printing applied through in-mold labeling, wherein the in-mold label has a thickness of less than 30 micrometers, in particular less than 20 micrometers, more particularly less than 15 micrometers and preferably less than 10 micrometers.

44. An injection molded product, in particular according to claim 43, wherein the product is at least largely transparent and has been demolded from a mold according to any one of claims 39-42.